

Delivering the Internal Energy Market

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Messages

- **Competition and Integration make electricity cheaper**
- **Current policy will not reap major benefits**
- **To reap these benefits:**
 - Market design needs to be updated
 - An European layer for network planning and operation
- **Alternatively, scope for markets will vanish**

Agenda

- 1. Benefits of integration**
- 2. Insufficiencies of current policies**
- 3. Reaping the benefits**

Benefits of integration

- **Geographic averaging of individual resources**
- **Pooling of national resources**
- **Pooling of reserves**
- **More diversified portfolio of plants**
- **Competition** at all steps of the merit order curve
 - lower mark-ups -> lower prices
 - Higher cost-reduction incentives

Benefits of integration

Example: two very similar systems -> lower bound

System cost for the existing power plant park

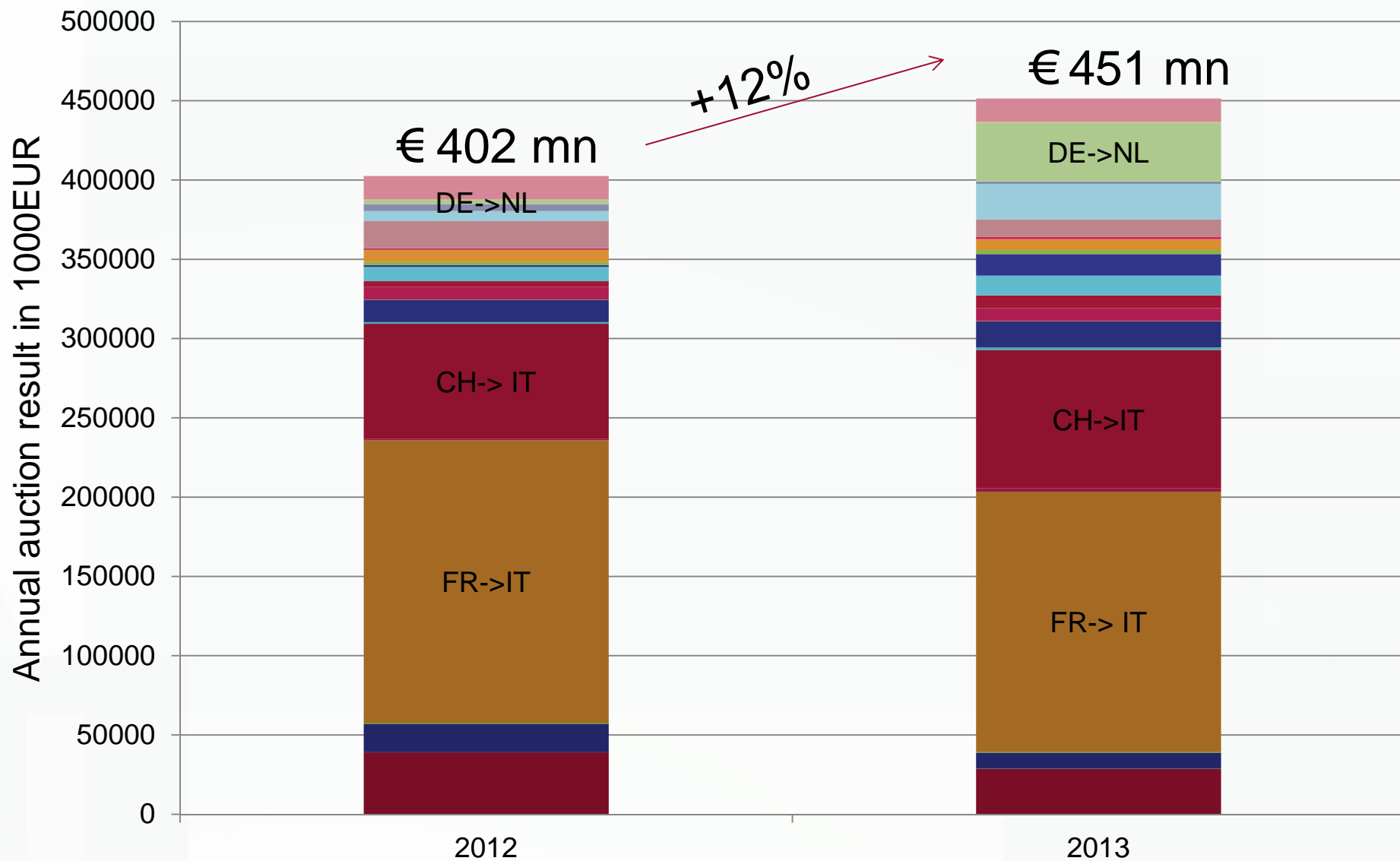
	No Integration	5% Transmission	Full Integration
Total costs	100	99.1	98.1

System cost when allowing for re-optimising the power plant park

	No Integration	5% Transmission	Full Integration
Current Renewables	100	98.9	97.5
High Renewables	100	97.5	95.4

1. Significant trade benefits accrue already at limited trade
2. Additional gain in Re-optimisation of power plant park
3. Increasing RES share increases the value of interconnection

Willingness to pay for interconnectors



Insufficiencies of current policies

1. Benefits of integration

2. Insufficiencies of current policies

- Market Design
- Infrastructure

3. Reaping the benefits

Market Design

- **Market Design** has to ensure that production, consumption and investment decisions do depend on the cost (incl. externalities) and not on the country
- Network Codes will establish **weak interfaces** for trading energy
- Major issues not internationally traded
 - Renewables
 - Capacity
 - Location
 - System stability
- **Lack of a “grand-design”**
- **No visibility of the future market design => uncertainty**

Infrastructure

- The **physical network** and its operation have to reliably ensure the optimal cross-border exchanges

Change in annual average net transfer capacity between 2009 and 2013

	Import from France	Export to France
DE	21%	-29%
UK	-6%	-5%
BE	8%	19%
ES	48%	31%
IT	-39%	-2%
CH	-2%	-2%

Infrastructure

- **Infrastructure planning and funding is driven by the interest of TSOs and national regulators**

- TSO want to reduce cost they cannot fully pass-through to customers
- Regulators want low national network tariffs

=> incentives not aligned with maximising welfare of European citizens

- **Infrastructure package**

- Will Support selected projects (permissions, cross-border cost-sharing, CEF)
- Selection based on ENTSO modelling

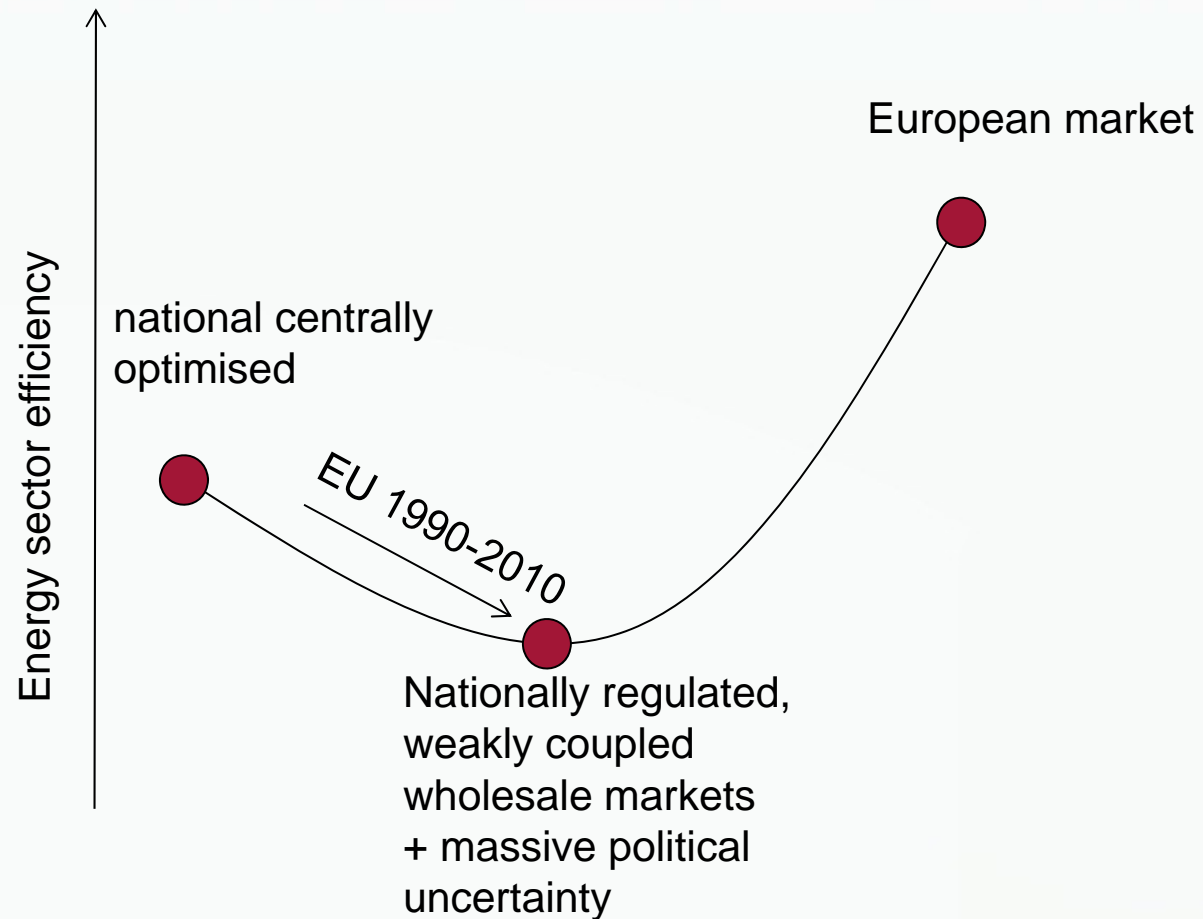
Reaping the benefits

1. Benefits of integration
2. Insufficiencies of current policies
3. Reaping the benefits

Reaping the benefits

- **Market design needs to be updated**
 - Develop a „grand design“
 - Locational prices
 - Predictability of technology support schemes
 - ...
- **A European layer for network planning and operation**
 - A **public model** of the European energy system
 - A **European regulator** to evaluate ENTSO plan based on this modelling
 - Day-to-day network operation by an **independent European operator**

Alternatively, we might be forced to go back



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Thank you!

Back-up

Determining optimal infrastructure

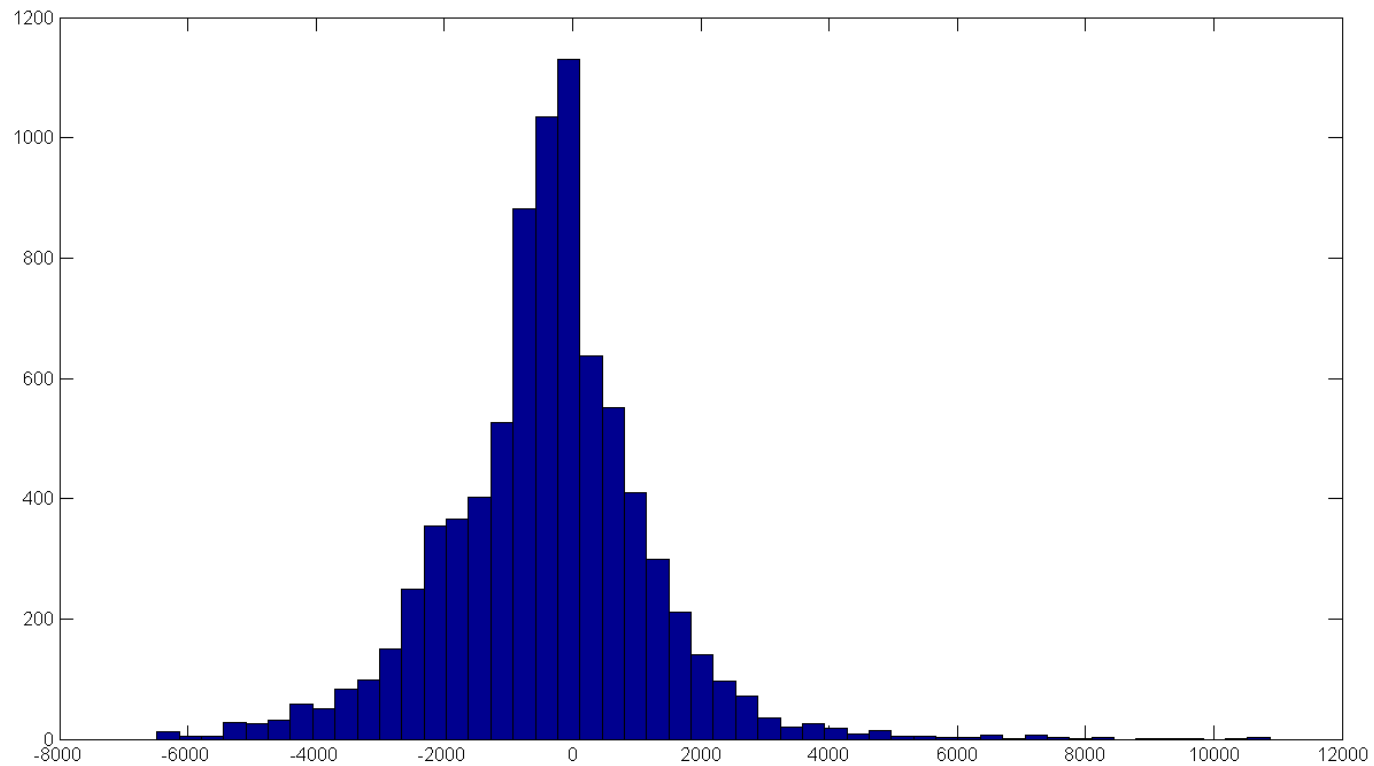
- **Determining optimal infrastructure need is a challenging exercise that crucially depends on a number of assumptions.**
 1. Which measure should be optimised by the infrastructure investment?
 2. Which development of the energy system in the coming decades is considered?
 3. Which technical options are considered?
 4. What cost assumptions for the different options?
 5. Which market design is assumed?
- => Estimates are largely assumption driven and barely comparable**

Electricity has multiple dimensions that can be individually traded

	Nationally administered	National market	National market with an interface for imports/exports	European market	Expected change in Importance
Ancillary services					+
Intraday & Balancing			Nordic+		+
Day-ahead delivery of electricity					-
Supply Adequacy					+
Location			Nordic		+
“Greenness”		Quotas			+
Emissions				ETS	

- Dimensions interact: => „grand design“ or complex set of interfaces
- Existing national arrangements and national plant park

Day-ahead wind forecast error in Germany 2012 in MW



Discussion: Governance

Different regional settings

- EU 27+ (ENTSO, ACER, EU)
- NWE
- Penta-lateral
- Bilateral (FR-DE)

Different institutional frameworks

- Merger of TSOs
- Independent system operator
- Merger of PX
- Joint regulator